

AD-A210 413

ARTECH CORP FALLS CHURCH VA

F/8 11/6

PREPARATION AND TESTING OF 2-IN HY-100 STEEL PLATE.(U)

SEP 81

N00014-81-C-2240

UNCLASSIFIED

ARTECH-J8137

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1 of 1
AD-A210 413



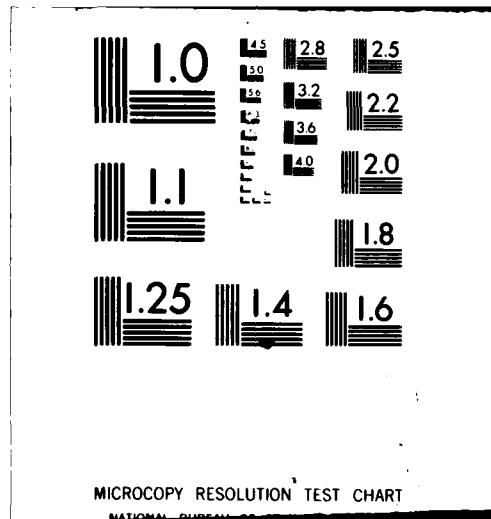
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ARTECH CORP. 2901 Telestar Court Falls Church, Virginia 22042 (703) 560-3292

AD A110413

PREPARATION AND TESTING
OF 2-IN HY-100 STEEL PLATE
(Unclassified)

September 2, 1981

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SELECTED
FEB 2 1982
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Prepared for
NAVAL RESEARCH LABORATORY
Washington, D. C. 20375
Code 6380 (F. J. Loss)

Contract No. N00014-81-C-2240

DTIC FILE COPY

ARTECH  J8137

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Approved for public release; distribution unlimited

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Consumer Protection • Power Sources • Materials • Instrumentation • Testing • Analysis

PREPARATION AND TESTING
OF 2-IN HY-100 STEEL PLATE
(Unclassified)

1/2 - 1/2 of this report to
(2-in.)

I. Objective: To assist NRL in the procurement of HY-100 steel plate (2" thick) from various suppliers and to determine tensile and assist in the determination of dynamic tear properties of material provided by NRL.

II. Work Performed: ARTECH CORP. technical personnel have conferred with NRL Code 6380 personnel and provided consultation services in the procurement of 2-inch HY-100 plates from various suppliers. Continuous liaison with the suppliers has been maintained to assure conformance with all applicable specifications.

ARTECH CORP. has determined tensile properties of material provided by NRL. The original source of this material was Heat #1, Phoenix Steel Corp. The results are presented below:

Accession For	
NTIS CARD	<input checked="" type="checkbox"/>
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Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Special

TENSILE PROPERTIES
HY-100

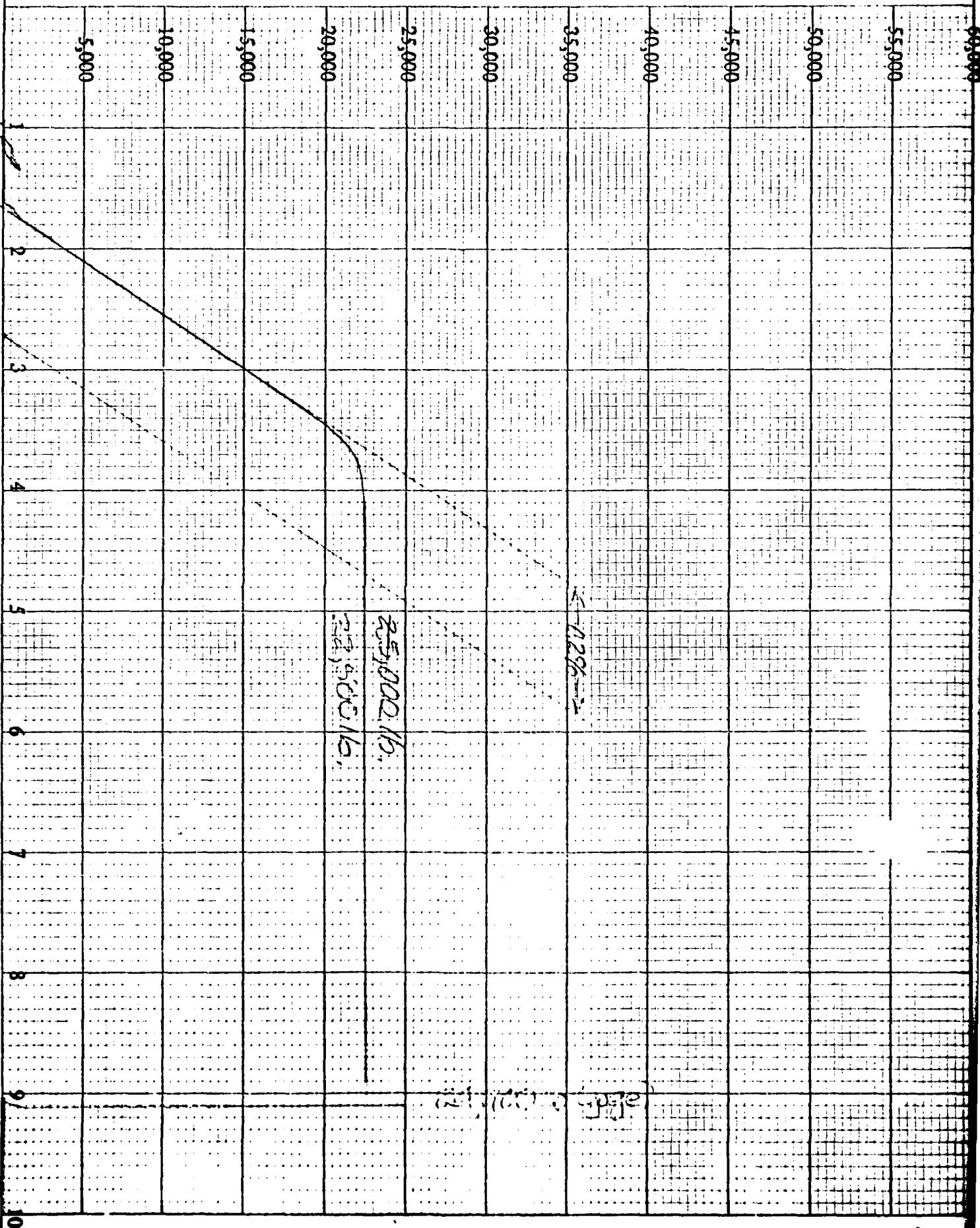


Specimen Number	Cross Sectional Area, in. ²	Yield Str. 0.2% Offset kpsi	Ultimate Ten. Str. kpsi	Elongation in 2.0, %	Reduction in Area, %
T1	0.1985	113.3	124.4	23.4	72.5
T2	0.1974	112.0	124.3	22.7	72.5
T3	0.1971	111.9	123.6	22.9	72.0
T4	0.1982	111.0	123.4	23.1	70.8

The above properties are considered normal and satisfactory with respect to intended use. Standard ASTM-E8, .505 tensile specimens have been utilized. Individual charts pertaining to the above tests are presented in the following pages.

Test No. 11 Size 0.020 in. Alt. 0.020 in. Yield Point Lbs. Sq. In. 13,500 Ultimate Str. Lbs. Sq. In. 13,500
 Elongation } In. 2.0 Inches 2.0 Per Cent Elongation 25.0 Per Cent Reduced Area 25.0
 Compression }

LOAD IN POUNDS



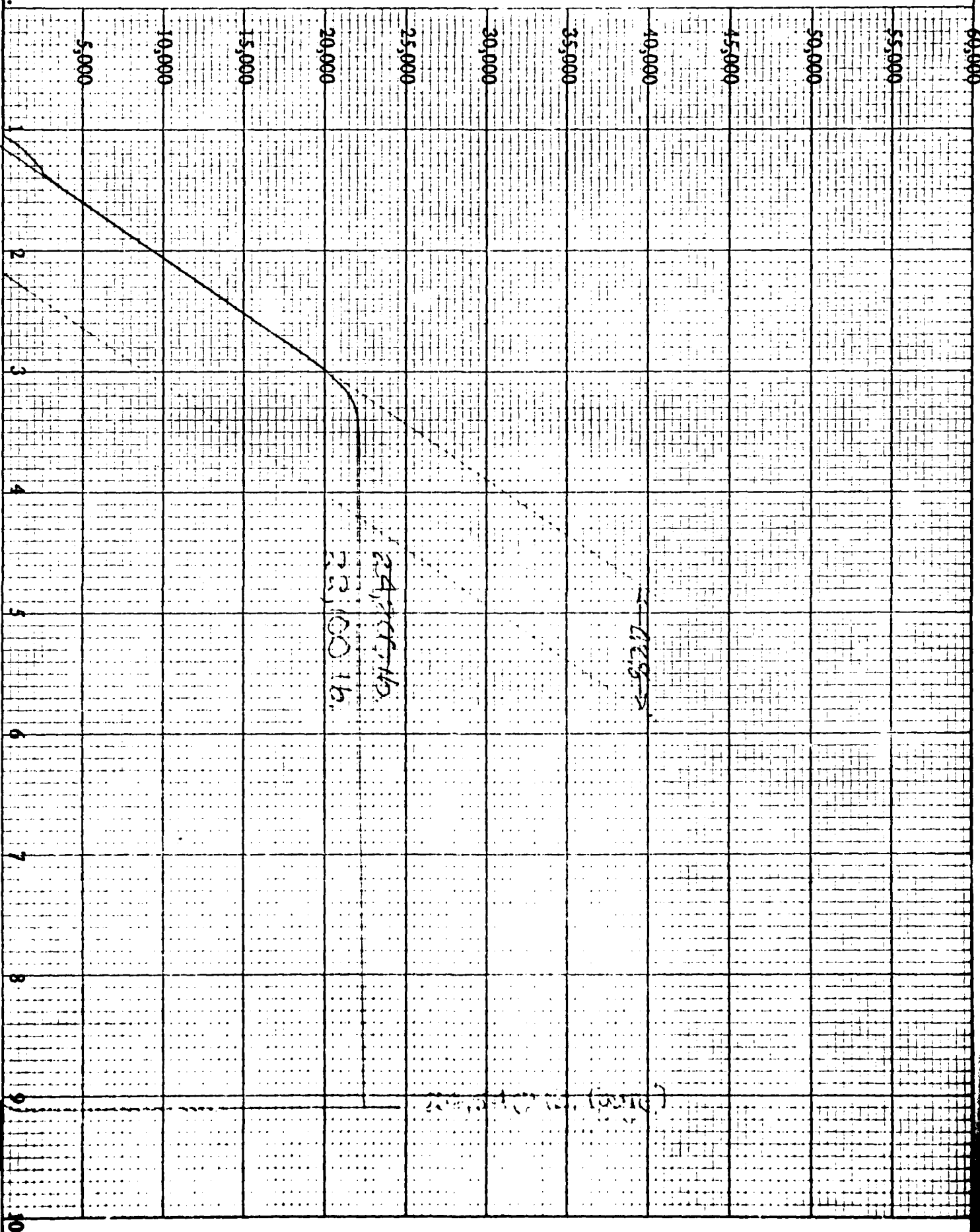
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ELONGATION-COMPRESSION

TINUS OLSEN TESTING MACHINE CO

Test No. 12 Size 12.0 A 12.0 Yield Point Lbs. Sq. In. 11,000 Ultimate Str. Lbs. Sq. In. 124,300
 Elongation } In. 2.0 Inches 2.0 Per Cent Elongation 22.5 Per Cent Reduced Area 72.5
 Compression }

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ELONGATION-COMPRESSION

TINUS OLSEN TESTING MACHINE CO.

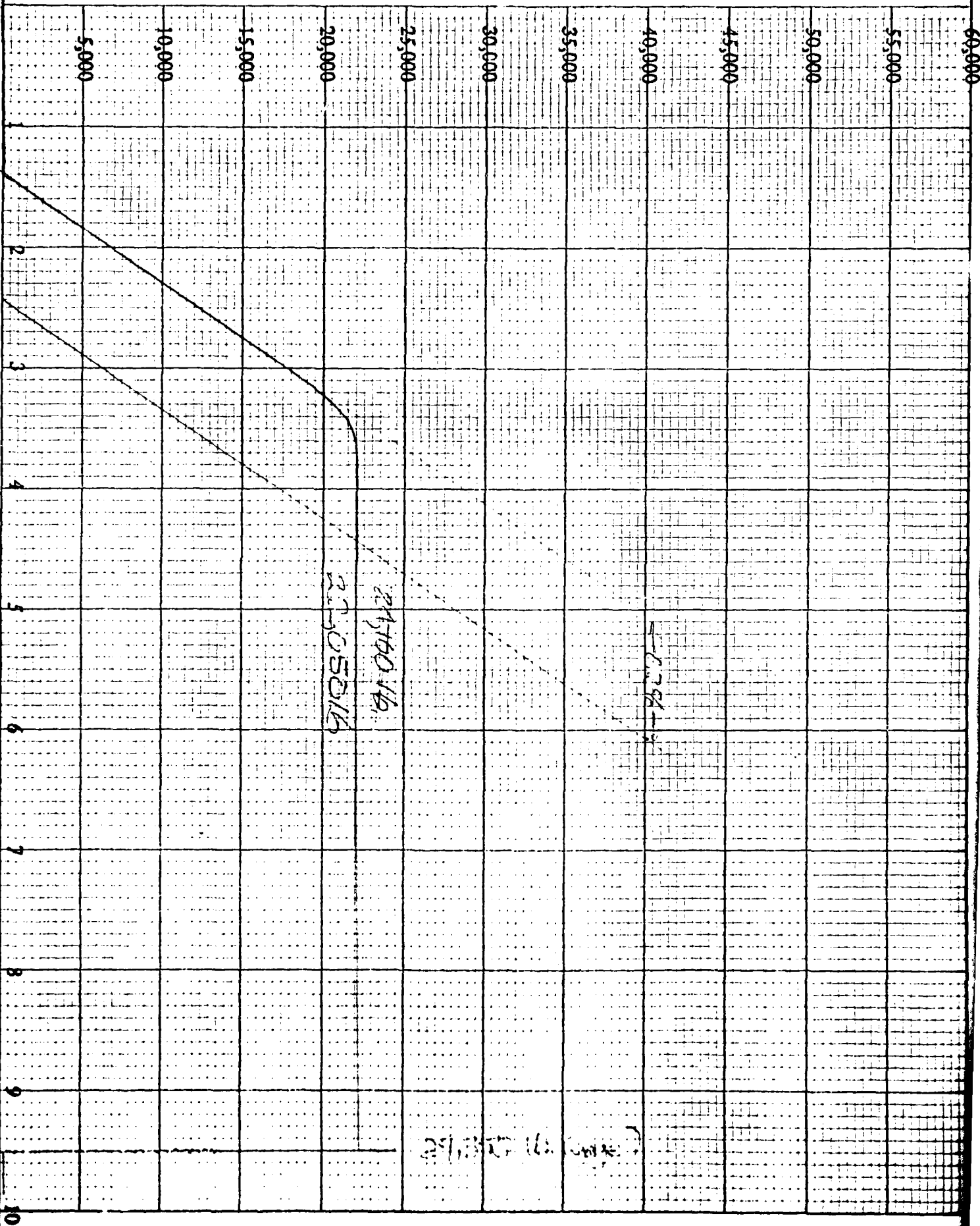
Test No. 13 Size 0.5071 Area 0.0001 Yield Point Lbs. Sq. In. 117,100 Ultimate Str. Lbs. Sq. In. 172,500
 Elongation } In. 2.0 Inches 0.001 Per Cent Elongation 7.25 Per Cent Reduced Area ...
 Compression }

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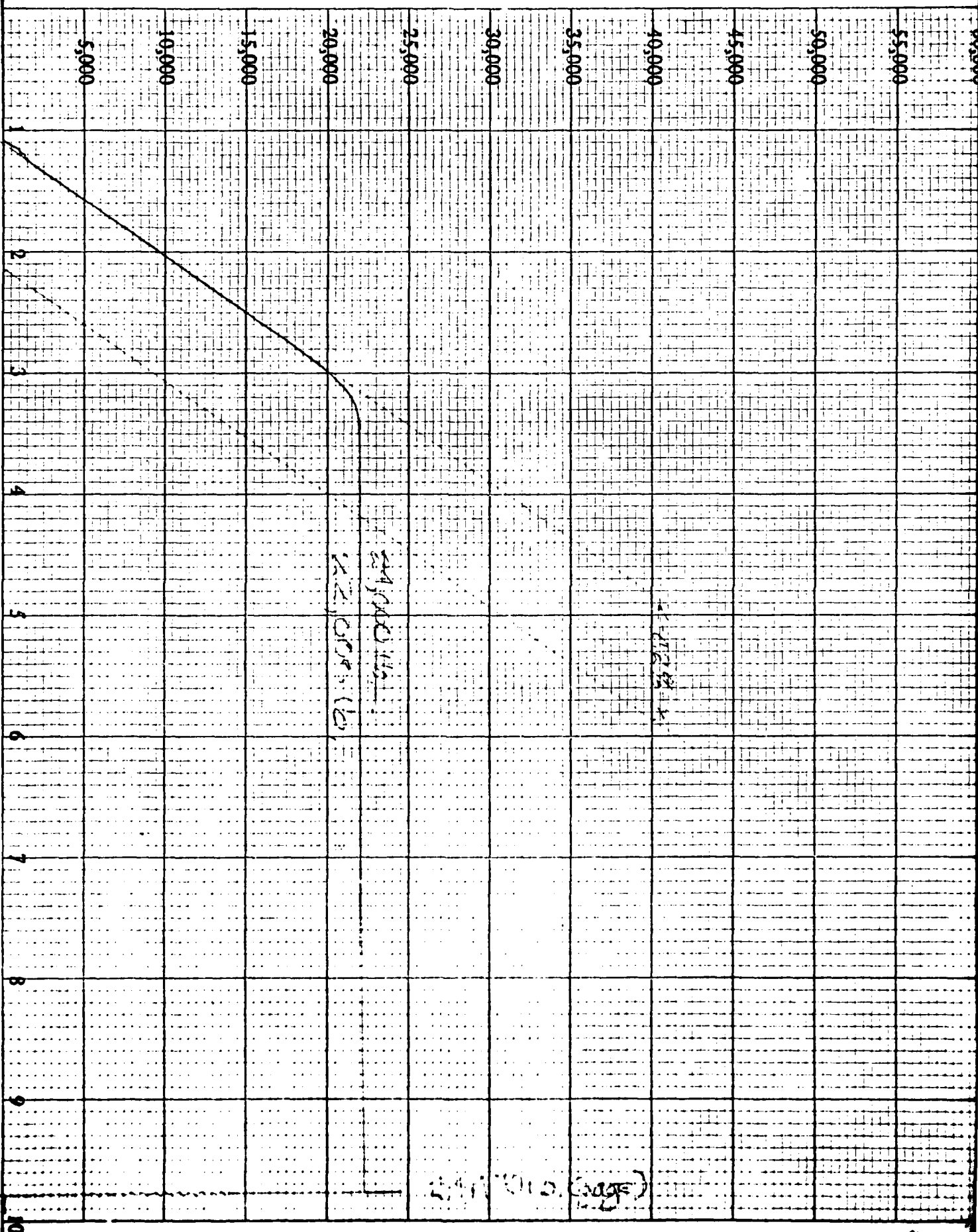
ELONGATION-COMPRESSION

TINUS OLSEN TESTING MACHINE CO



Test No. 14 Size 0.502 in Area 0.157 in² Yield Point Lbs. Sq. In. 11,000 Ultimate Str. Lbs. Sq. In. 12,500
 Elongation } In. 2.0 Inches 23.1 Per Cent. Elongation 60.8 Per Cent. Reduced Area 60.8
 Compression }

LOAD IN POUNDS



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ELONGATION-COMPRESSION

TINUS OLSEN TESTING MACHINE CO

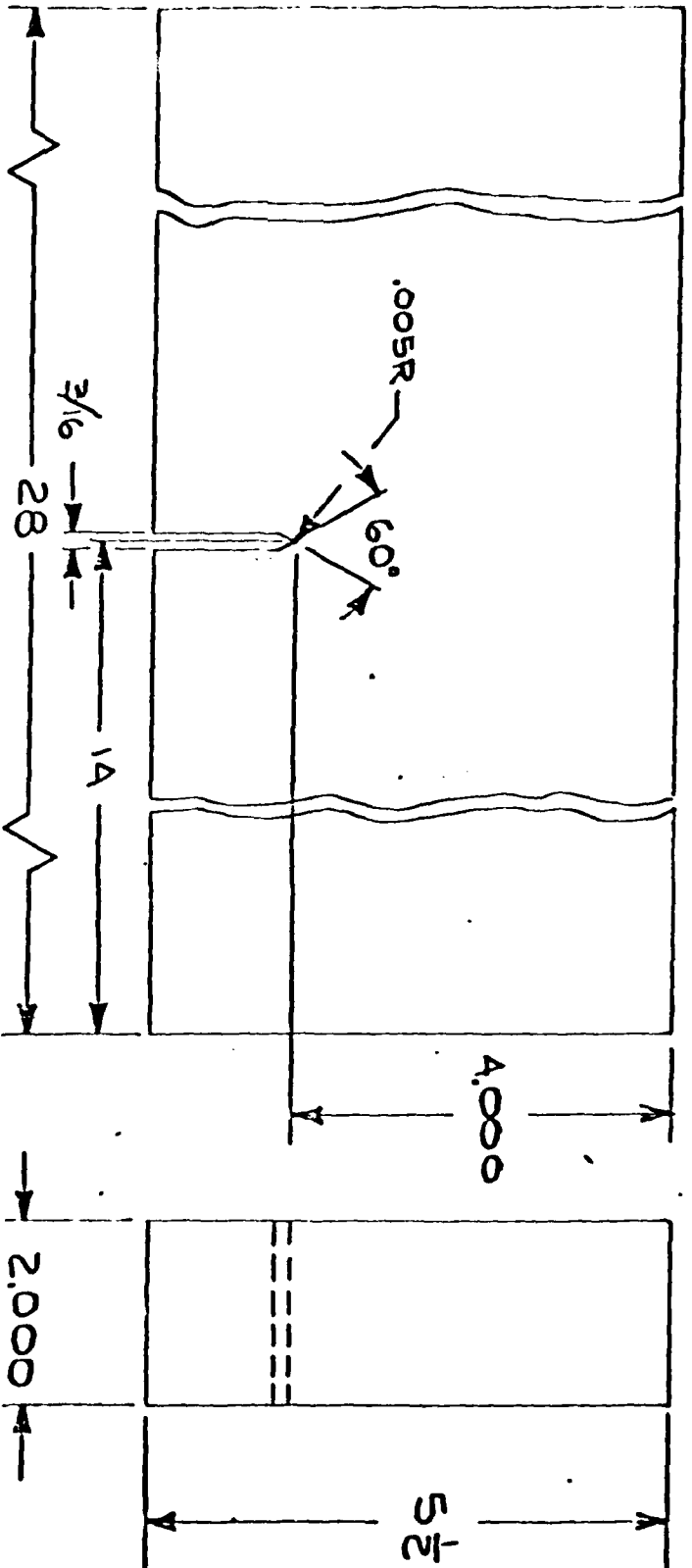
24,000 lbs (approx)

ARTECH CORP. has provided dynamic tear specimens for testing at NRL as follows:

8 - 2" Dynamic Tear Specimens per ARTECH
Drawing #100020S

12 - 5/8" Dynamic Tear Specimens per ASTM
E604

III. Status: All work required by this contract has been completed and delivered.



- NOTES:
- (1) BLANKS MAY BE SAW CUT BEFORE MACHINING OR ENTIRE SECTION OF WELDMENT COULD BE MACHINED TO REQUIRED THICKNESS.
 - (2) STARTING AT THE TOP SIDE, MACHINE SURFACES AS NOTED
 - (3) AFTER MACHINING TO THICKNESS, SPECIMEN TO BE ETCHED & ϵ OF WELD TO BE MARKED FOR REFERENCE IN CUTTING BLANKS TO SIZE.
 - (4) MACHINE SPECIMENS TO DIMENSIONS SHOWN, SLOT & NOTCH ϵ OF WELD AS INDICATED

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTR NO.		ARTECH CORP.	
		TOLERANCES: FRACTIONS $\pm \frac{1}{64}$		DR BY $\frac{5}{16}$ $\frac{1}{2}$ $\frac{3}{4}$		2816 Fairfax Drive Falls Church, Virginia	
		DECIMALS $\pm .010$		DWG SUP		2-in. DYNAMIC TEAR SPECIMEN	
		ANGLES $\pm 1^\circ$		CHK. $\frac{1}{16}$ $\frac{1}{8}$ $\frac{1}{4}$			
NEXT ASSY		USED ON		ENGR $\frac{1}{16}$ $\frac{1}{8}$ $\frac{1}{4}$			
APPLICATION		MATERIAL:		PROJ APPD		SIZE A	
FINISH:						CODE IDENT NO 1000205	
						SCALE 1/2" = 1"	
						SHEET 1 OF 1	